

TROPICAL DEPRESSION 03W

On 3 June the remains of Typhoon Susan (02W) sped northeastward and left behind the low-level southwest monsoonal flow which terminated abruptly in the northwestern Philippine Sea. Within a day the enhanced convection in the northwestern Philippine Sea acquired convective banding and cyclonic rotation. A Tropical Cyclone Formation Alert documented this event at 040200Z. The

convection consolidated near the low-level circulation center and the first warning on Tropical Depression 03W followed at 040600Z based on a satellite intensity estimate of 30 kt (15 m/sec) surface winds. The satellite imagery (Figure 3-03-1) shows Tropical Depression 03W near its maximum intensity of 30 kt (15 m/sec).

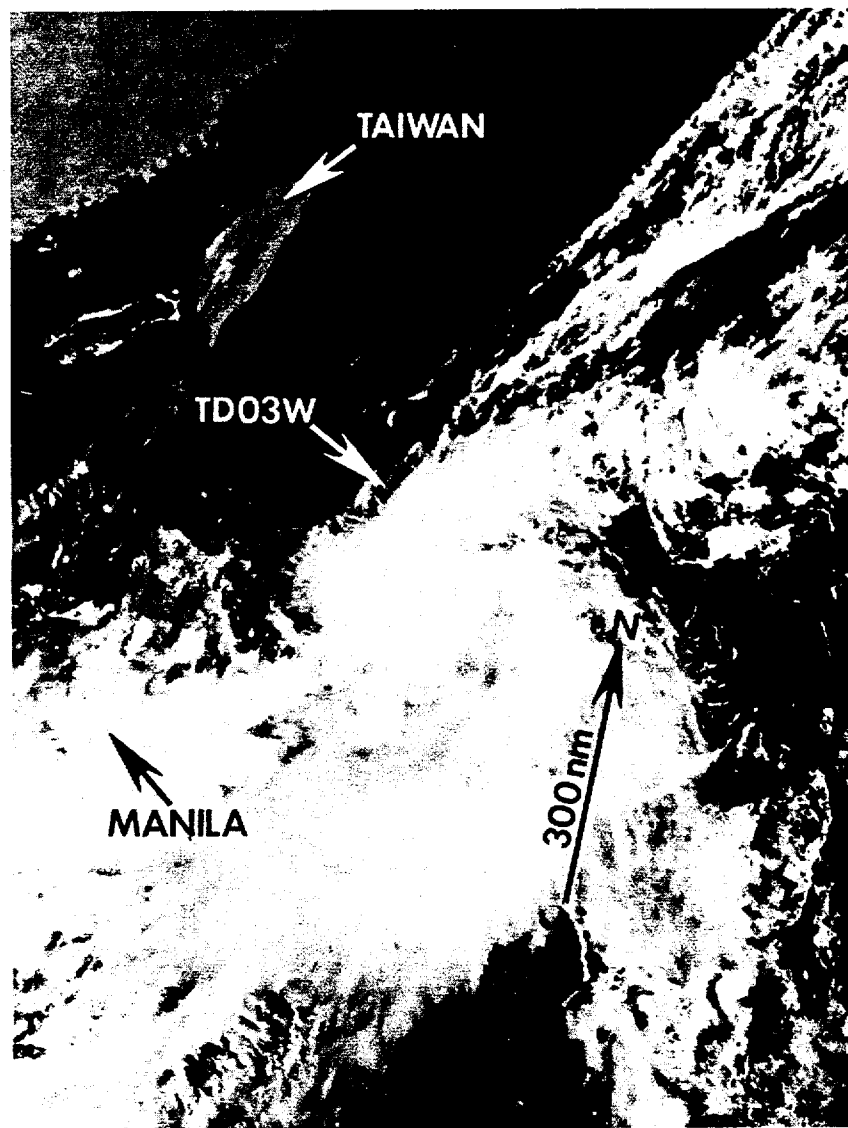


Figure 3-03-1. Tropical Depression 03W near peak intensity (040037Z June DMSP visual data).

Shortly after the first warning was issued, the central convection collapsed and further intensification ceased. In Figure 3-03-2 note that the system center is basically free of deep convection with only remnants of high cloud debris evident. The banding feature is displaced to the south and east. The next

daytime visual imagery (Figure 3-03-3) reveals low-level stratiform cloudiness filling the center. The deep convection is well removed from the center with the exception of one transitory cumulonimbus. The final warning was issued on 051200Z June, when it became apparent that the system was dissipating.

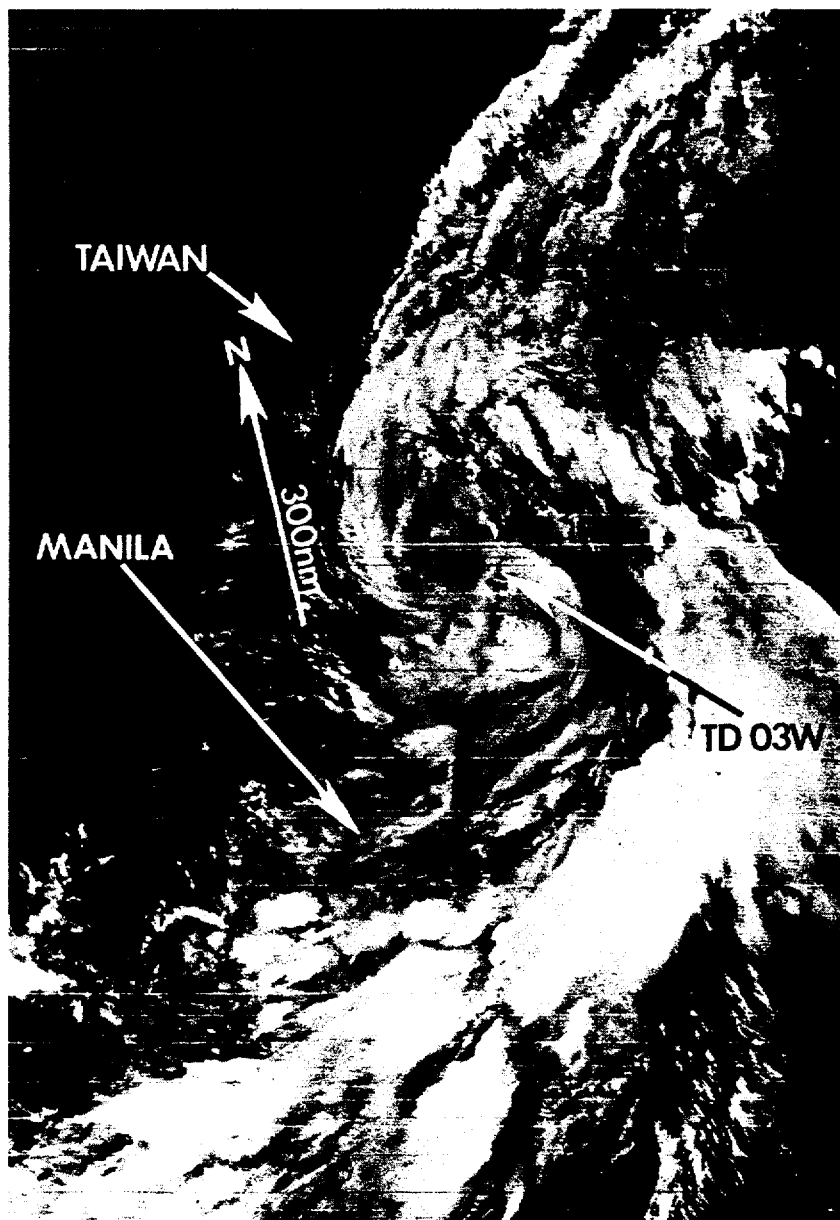


Figure 3-03-2. Only high-level cloud debris are in evidence over the center of the low-level circulation (041318Z June DMSP infrared imagery).

In retrospect Tropical Depression 03W's failure to mature and achieve tropical storm intensity may be related to its track. In contrast to Typhoon Susan (02W), which traveled northeastward along a zone of increased cloudiness, Tropical Depression 03W took a west-northwesterly track into the cloud minimum area that had settled across southeastern China and the northern South China Sea. Bao (1981) developed a hypothesis

for forecasting typhoon movement based on satellite observed cloudiness which suggested that tropical cyclones move into, or along, areas of preexisting enhanced cloudiness - or conversely, tropical cyclones don't move into areas of minimum cloudiness. If they do, there is a price. Unless the tropical cyclone is large enough to modify the ambient environment, which is unfavorable, dissipation will result.



Figure 3-03-3. Stratiform low-level cloudiness fills the center of TD 03W (042302Z June NOAA visual imagery).